

DO-15 Plastic-Encapsulate Diodes

Transient Voltage Suppressor Diodes

Features

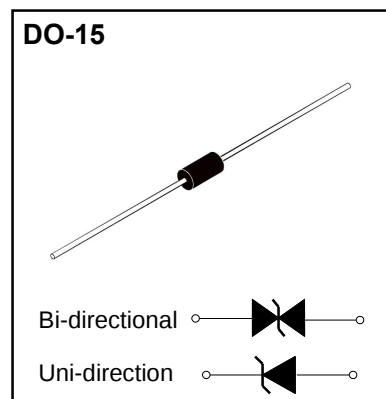
- P_{PPM} 600W
- V_{RWM} 5.8V- 509V
- Low power loss, high efficiency
- Excellent clamping capability

Applications

- Protect sensitive circuit from damage by high voltage transients
- Lighting, ESD transient voltage protection of IC, system
- Inductive switching load protection of IC, system
- Electrical Fast Transient Immunity protection of IC, system

Mechanical Data

- Case: JEDEC DO-15 molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated, solderable per MIL- STD-202, Method 208
- Polarity: Color band denotes cathode end



Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	P_{PPM}	W	with a 10/1000us waveform	600
Peak pulse current(1)	I_{PPM}	A	with a 10/1000us waveform	See Next Table
Power dissipation	P_D	W	On infinite heat sink at $T_L=75^{\circ}\text{C}$	5.0
Peak forward surge current(2)	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	100
Operating junction and storage temperature range	T_J, T_{STG}	$^{\circ}\text{C}$		-55 to +150

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (3)	V_F	V	at 25A for unidirectional only	3.5/5.0
Thermal resistance	$R_{\theta JL}$	$^{\circ}\text{C/W}$	Between junction and lead	20
	$R_{\theta JA}$	$^{\circ}\text{C/W}$	Between junction and Ambient	75
	$R_{\theta JC}$	$^{\circ}\text{C/W}$	Between junction and Case	15

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per Fig.2.
- (2) Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
- (3) $V_F<3.5\text{V}$ for devices of $V_{BR}<200\text{V}$ and $V_F<5.0\text{V}$ for devices of $V_{BR}>201\text{V}$

Electrical Characteristics (T_A=25°C unless otherwise noted)

Part Number		Reverse Stand-off Voltage	Breakdown Voltage V _{BR} @ I _T		Test Current	Max. Clamping Voltage @ I _{PP}	Max. Peak Pulse Current	Max. Reverse Leakage @ V _{RWM}
UNI-POLAR	BI-POLAR	V _{RWM} (V)	Min.(V)	Max.(V)	I _T (mA)	V _{C MAX} (V)	I _{PP} (A)	I _R (uA)
P6KE6.8A	P6KE6.8CA	5.8	6.45	7.14	10	10.5	58.1	1000
P6KE7.5A	P6KE7.5CA	6.4	7.13	7.88	10	11.3	54.0	500
P6KE8.2A	P6KE8.2CA	7.0	7.79	8.61	10	12.1	50.4	200
P6KE9.1A	P6KE9.1CA	7.8	8.65	9.55	1	13.4	45.5	50
P6KE10A	P6KE10CA	8.6	9.50	10.50	1	14.5	42.1	10
P6KE11A	P6KE11CA	9.4	10.50	11.60	1	15.6	39.1	5
P6KE12A	P6KE12CA	10.2	11.40	12.60	1	16.7	36.5	5
P6KE13A	P6KE13CA	11.1	12.40	13.70	1	18.2	33.5	1
P6KE15A	P6KE15CA	12.8	14.30	15.80	1	21.2	28.8	1
P6KE16A	P6KE16CA	13.6	15.20	16.80	1	22.5	27.1	1
P6KE18A	P6KE18CA	15.3	17.10	18.90	1	25.5	24.2	1
P6KE20A	P6KE20CA	17.1	19.00	21.00	1	27.7	22.0	1
P6KE22A	P6KE22CA	18.8	20.90	23.10	1	30.6	19.9	1
P6KE24A	P6KE24CA	20.5	22.80	25.20	1	33.2	18.4	1
P6KE27A	P6KE27CA	23.1	25.70	28.40	1	37.5	16.3	1
P6KE30A	P6KE30CA	25.6	28.50	31.50	1	41.4	14.7	1
P6KE33A	P6KE33CA	28.2	31.40	34.70	1	45.7	13.3	1
P6KE36A	P6KE36CA	30.8	34.20	37.80	1	49.9	12.2	1
P6KE39A	P6KE39CA	33.3	37.10	41.00	1	53.9	11.3	1
P6KE43A	P6KE43CA	36.8	40.90	45.20	1	59.3	10.3	1
P6KE47A	P6KE47CA	40.2	44.70	49.40	1	64.8	9.4	1
P6KE51A	P6KE51CA	43.6	48.50	53.60	1	70.1	8.7	1
P6KE56A	P6KE56CA	47.8	53.20	58.80	1	77.0	7.9	1
P6KE62A	P6KE62CA	53.0	58.90	65.10	1	85.0	7.2	1
P6KE68A	P6KE68CA	58.1	64.60	71.40	1	92.0	6.6	1
P6KE75A	P6KE75CA	64.1	71.30	78.80	1	103.0	5.9	1
P6KE82A	P6KE82CA	70.1	77.90	86.10	1	113.0	5.4	1
P6KE91A	P6KE91CA	77.8	86.50	95.50	1	125.0	4.9	1
P6KE100A	P6KE100CA	85.5	95.0	105.0	1	137.0	4.5	1
P6KE110A	P6KE110CA	94.0	105.0	116.0	1	152.0	4.0	1
P6KE120A	P6KE120CA	102.0	114.0	126.0	1	165.0	3.7	1
P6KE130A	P6KE130CA	111.0	124.0	137.0	1	179.0	3.4	1
P6KE150A	P6KE150CA	128.0	143.0	158.0	1	207.0	2.9	1
P6KE160A	P6KE160CA	136.0	152.0	168.0	1	219.0	2.8	1
P6KE170A	P6KE170CA	145.0	162.0	179.0	1	234.0	2.6	1
P6KE180A	P6KE180CA	154.0	171.0	189.0	1	246.0	2.5	1
P6KE200A	P6KE200CA	171.0	190.0	210.0	1	274.0	2.2	1
P6KE220A	P6KE220CA	185.0	209.0	231.0	1	328.0	1.9	1
P6KE250A	P6KE250CA	214.0	237.0	263.0	1	344.0	1.8	1
P6KE300A	P6KE300CA	256.0	285.0	315.0	1	414.0	1.5	1
P6KE350A	P6KE350CA	300.0	332.0	368.0	1	482.0	1.3	1
P6KE400A	P6KE400CA	342.0	380.0	420.0	1	548.0	1.1	1
P6KE440A	P6KE440CA	376.0	418.0	462.0	1	602.0	1.0	1
P6KE480A	P6KE480CA	408.0	456.0	504.0	1	658.0	0.9	1
P6KE510A	P6KE510CA	434.0	485.0	535.0	1	698.0	0.9	1
P6KE520A	P6KE520CA	442.0	494.0	546.0	1	698.0	0.9	1
P6KE530A	P6KE530CA	450.0	503.0	556.0	1	725.0	0.8	1
P6KE540A	P6KE540CA	459.0	513.0	567.0	1	740.0	0.8	1
P6KE550A	P6KE550CA	467.0	522.5	577.5	1	760.0	0.8	1
P6KE600A	P6KE600CA	509.0	570.0	630.0	1	780.0	0.8	1

Typical Characteristics

FIG1: Peak Pulse Power Rating Curve

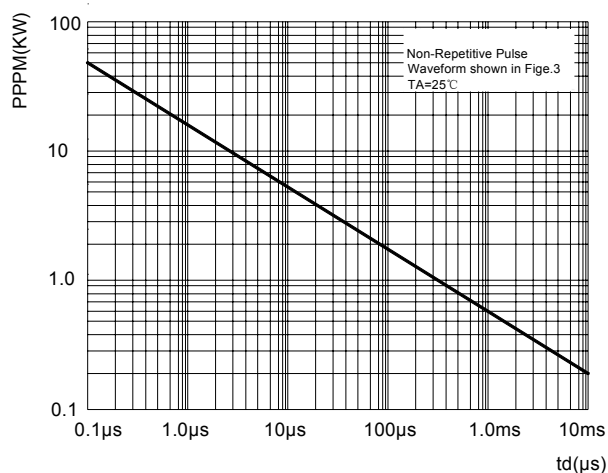


FIG2: Pulse Power or Current vs. Initial Junction Temperature

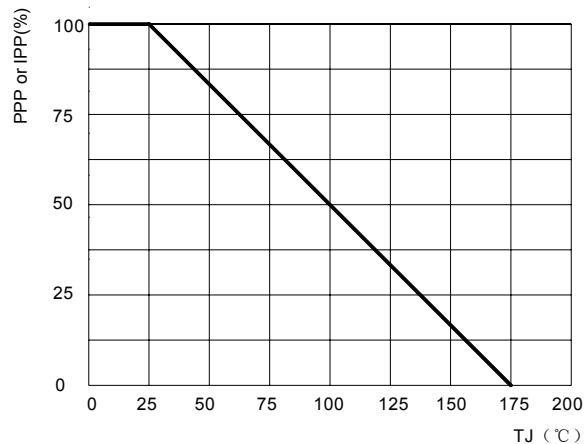


FIG3: Pulse Waveform

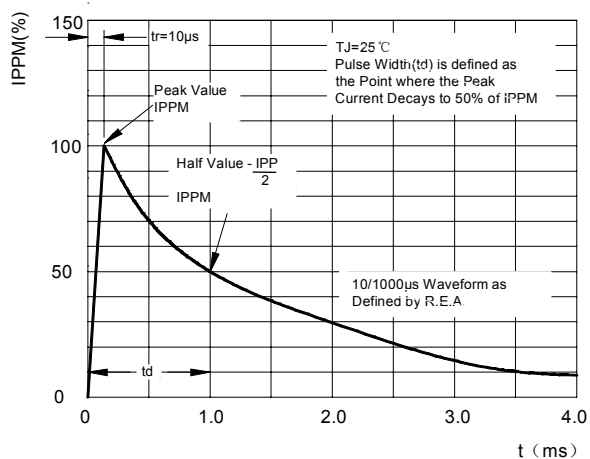


FIG4: Power Derating Curve

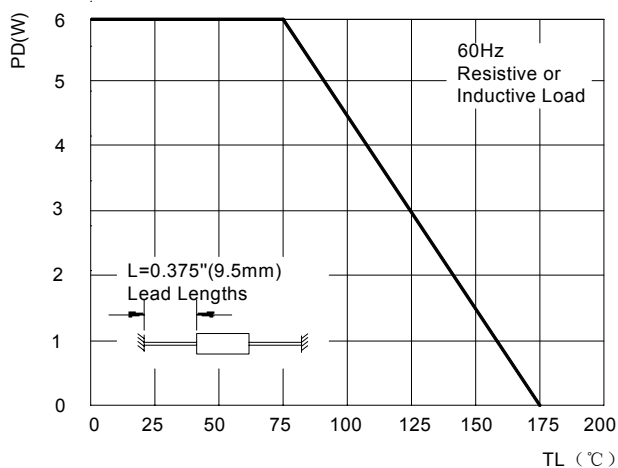


FIG5: Maximum Non-Repetitive Surge Current

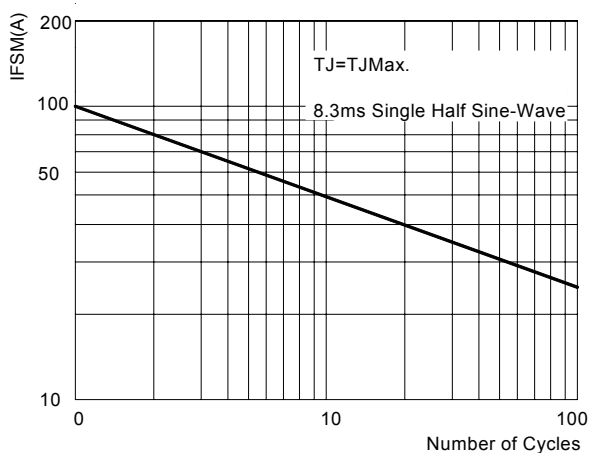
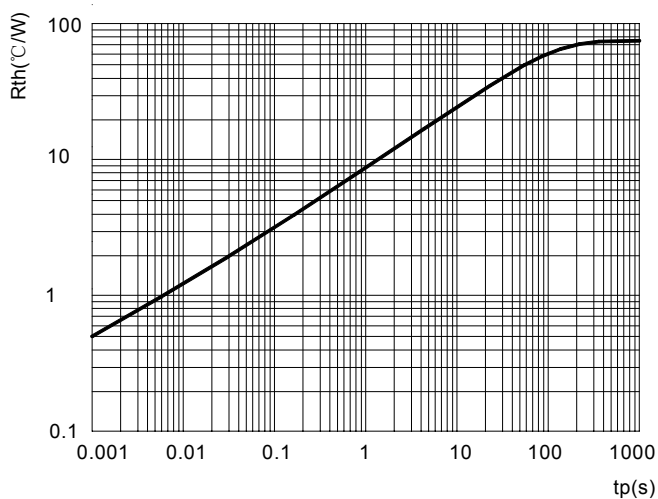
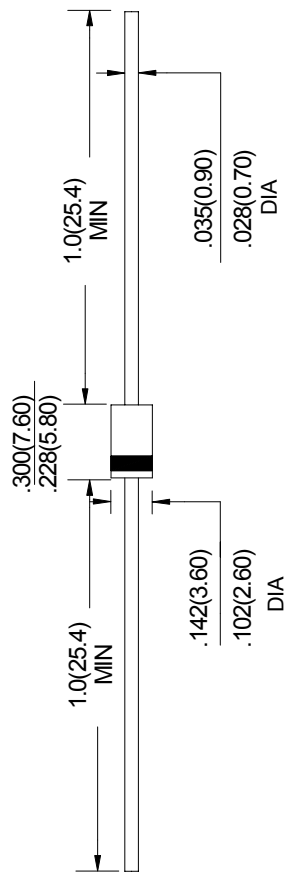


FIG6: Typical Transient Thermal Impedance



DO-15 Package Outline Dimensions



Unit: in inches (millimeters)

Ordering Information

Part Number	Package	Shipping Quantity
P6KE6.8(C)A- P6KE600(C)A	DO-15	3000/Box

Marking Diagram

Uni-direction



Bi-directional

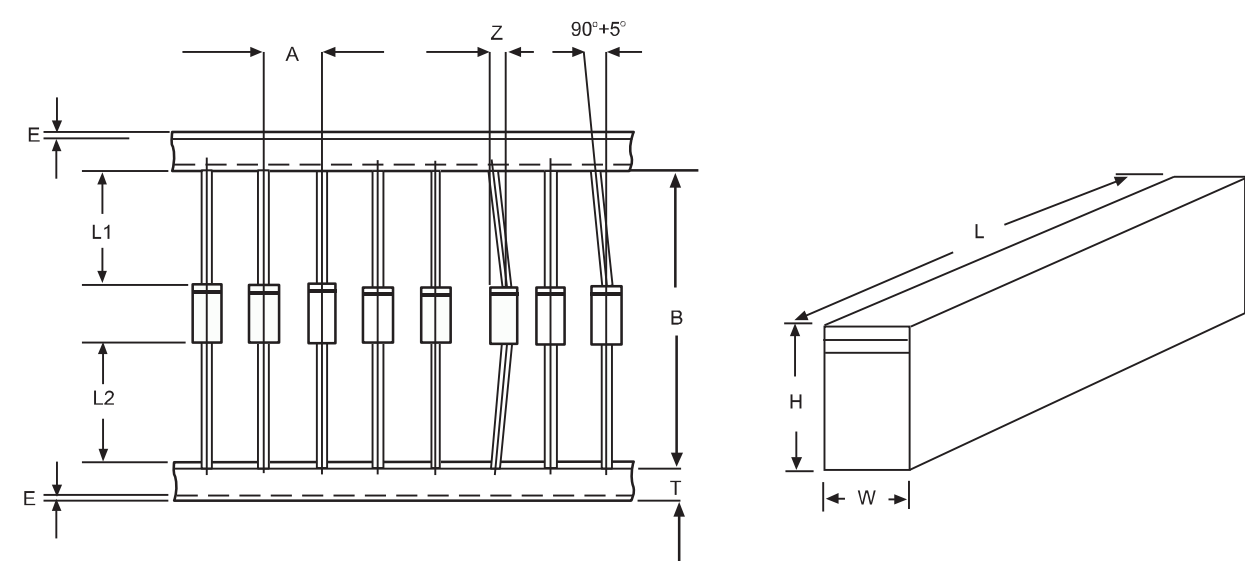


XX: From 6.8 To 600

Ammo Box Packaging Specifications For Axial Lead Rectifiers

Axial lead devices are packed in accordance with EIA standard RS-296-D and specifications given below

COMPONENT OUTLINE	COMPONENT PITCH A	INNER TAPE PITCH B	CUMULATIVE PITCH TOLERANCE
	±0.5mm(.020``)	+0.5mm(.020``)	
R-1	5.0mm	26.0mm	2.0mm/20pitch
R-1	5.0mm	52.4mm	2.0mm/10pitch
A-405	5.0mm	26.0mm	2.0mm/20pitch
A-405	5.0mm	52.4mm	2.0mm/10pitch
DO-34/DO-35	5.0mm	26.0mm	2.0mm/20pitch
DO-34/DO-35	5.0mm	52.4mm	2.0mm/10pitch
DO-41	5.0mm	26.0mm	2.0mm/20pitch
DO-41	5.0mm	52.4mm	2.0mm/10pitch
DO-15	5.0mm	52.4mm	2.0mm/10pitch
DO-27	10.0mm	52.4mm	2.0mm/10pitch
R-6	10.0mm	52.4mm	2.0mm/10pitch



ITEM	SYMBOL	SPECIFICATIONS(mm)	SPECIFICATIONS(inch)
Component alignment	Z	1.2max	0.048max
Tape width	T	6.0±0.4	0.236±0.016
Exposed adhesive	E	0.8max	0.032max
Body eccentricity	IL1-L2I	1.0max	0.040max
Box length	L	255.0±5.0	10.04±0.197
Box width	W	78.0±5.0	3.07±0.197
Box height	H	150.0±5.0	5.91±0.197

NOTE:Each component lead shall be sandwiched between tapes for A minimum of 3.2mm(0.126``)